

SONY

Explore a
different viewpoint.

Multi-purpose Cameras

BRC-300P
BRC-H700
HDC-X300/K
HDC-X310/K
HFU-X310

www.sonybiz.net/media



Standard Definition

BRC-300P

High Definition

BRC-H700

HDC-X300/K

HDC-X310/K

Remote

multi-purpose

cameras

Explore a different

From natural history and documentaries to sports, live events and reality shows, television viewers are demanding a more exciting, more involving on-screen experience.

Searching for an ever-wider palette of creative options, programme makers are looking for new ways to captivate audiences with a unique Point of View that stands out from the crowd.

Opening up a new world of High Definition and Standard Definition shooting possibilities, the Sony range of remote multi-purpose cameras gives broadcasters greater flexibility than ever before. Without the size and bulk of a full-sized camera – and its operator – it's easier to pick the perfect Point of View that suits your creative vision. Grab a grandstand view from the roof of a sports stadium or concert hall. See animals close up in their natural habitat. Go where no camera has ever been before – and give your viewing audience a unique experience that's like no other.

There's a range of compact, feature-packed Sony multi-purpose cameras to suit all your Standard Definition and High Definition acquisition requirements. Compact and lightweight but without sacrificing imaging performance or advanced features, Sony multi-purpose cameras are the ideal choice in any situation. Mounted on a crane or in a plane or helicopter, they're the perfect choice to capture stunning wide-area images.

Their discreet size and remote operation also makes Sony multi-purpose cameras the ideal option when you don't want your presence to interfere with what's happening on the other side of the camera lens. Catch more intimate, revealing reactions from reality show contestants. Get closer to wildlife and natural subjects without them knowing you're even there.

**Isn't it time to give your production
a new viewpoint?**



viewpoint

A new world of exciting applications

Sony multi-purpose cameras are suitable for a wide range of applications where you need to acquire High Definition or Standard Definition pictures with maximum creative freedom and operational flexibility.



STUDIO PRODUCTION

Remote cameras are an integral part of today's automated news studios and other production environments. Adjustment of pan/tilt/zoom can be controlled via a range of systems.

WILDLIFE AND NATURAL HISTORY

Get nearer to natural subjects in their own habitat and capture images that would be impossible for a human camera operator to obtain.



AERIAL PHOTOGRAPHY

Mounted in a helicopter, light aircraft or on a crane, a remote camera affords breathtaking aerial views without the weight penalty of a full-sized camera and operator.



POINT OF VIEW

See the big picture with a clear view of what's happening in an operating theatre, lecture room, concert hall or sports stadium. As a permanently installed weather-cam, this multi-purpose camera provides broadcast-quality pictures round the clock from a fixed viewpoint.

SPORTS

Positioned behind the goal-mouth or at the track-side, a compact camera offers a perfect close-up view of the action without distracting athletes and judges.



LIVE EVENTS, CONFERENCES AND CORPORATE PRESENTATIONS

More businesses are demanding a high-quality acquisition solution for corporate events and live presentations. Pictures from a remotely controlled camera can be presented to audiences for projection, recording or streaming via the web. Sony multi-purpose cameras are an ideal partner for the Sony AWS-G500 Anycast Station™ Live Content Producer that allows high-clarity HD images to be seamlessly integrated with PC and other sources for big-screen projection.



REALITY PROGRAMMES

Multi-purpose cameras are an integral part of today's reality programmes. Controlled remotely, they can provide a superb quality close-up view of what's happening without disturbing contestants.

BRC-300P

FEATURES

Superb Picture Quality with a Mega Pixels 3CCD

The BRC-300P incorporates three 1/4.7-type Advanced HAD™ CCD sensors with a total of 1,070,000 pixels allowing the camera to deliver outstanding picture quality with high-resolution and accurate colour reproduction. The BRC-300P produces low-noise images and is ideal in low-illuminated shooting environments or when shooting dark subjects.

Precision 16:9 Technology

The BRC-300P captures images in both 4:3 and 16:9 aspect ratios and, with its 3CCD technology, is able to achieve a wide angle of view in 16:9 mode. Due to the greater number of pixels used in the 16:9 aspect ratio, the BRC-300P generates extremely high-resolution images when compared to conventional cameras.

High-Performance Sony Pan/Tilt/Zoom Mechanism

The BRC-300P covers a wide shooting range with its highly accurate Pan/Tilt mechanism. It has one of the widest ranges in its class: a pan range of 340 degrees and a tilt range of 120 degrees. The 340-degree pan range is covered in 8 seconds, while the 120-degree tilt range is covered in 4.5 seconds. The BRC-300P captures not only fast-moving objects, but also slow-moving objects without rocking vibration. What's more, the BRC-300P incorporates a 12x optical auto-focus zoom lens, allowing for a zoom capability of up to 48x when used in combination with its 4x digital zoom.

RS-232C/RS-422 Remote Control (VISCA protocol)

The BRC-300P can be controlled by external devices such as the optional RM-BR300 Remote Control Unit thanks to the well-known Sony VISCA protocol. All local controls such as Pan/Tilt/Zoom, camera settings and six presets are easily accessed, while up to seven cameras can be daisy-chained and controlled by the RM-BR300 Remote Control Unit.



RM-BR300

Control Panel

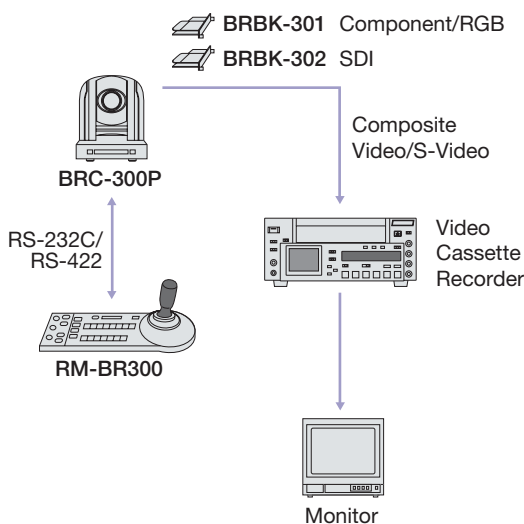


Supplied IR Remote
Commander Unit

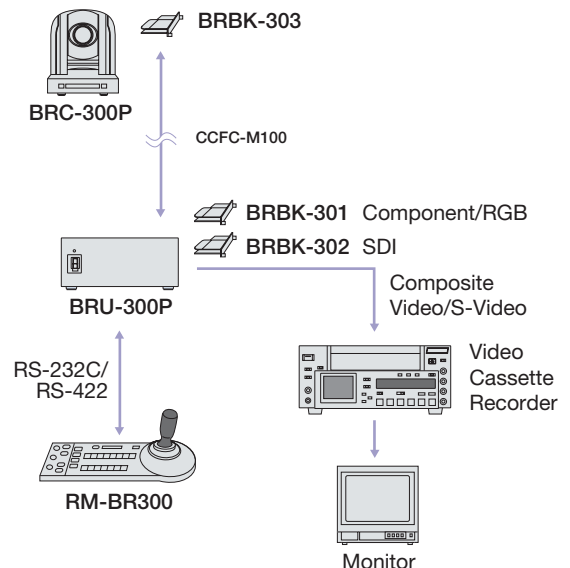


System Configuration

SHORT-DISTANCE OPERATION



LONG-DISTANCE OPERATION



Versatile Video Outputs

The BRC-300P can be used with a range of versatile optional interface cards that allow for flexible analogue and digital system configurations. Choose from the following interface cards for a solution that meets your individual requirements:

■ **BRBK-301***1 Analogue RGB/Component

■ **BRBK-302***1 SDI

Thanks to these convenient options, the BRC-300P truly functions as an all-in-one, compact robotic camera.

*1 Can be installed into the both BRC-300P and BRU-300P.

Ceiling or Desktop Mount Installation

Thanks to Sony's Image Flip functions, the BRC-300P can be ceiling-mounted using the supplied ceiling mount kit or can also be used on your desktop.

Six Presets

Various camera settings such as Pan/Tilt/Zoom and focus can be preset in up to six presets per camera.

Multi-function IR Remote Commander® Unit

Basic camera settings such as Pan/Tilt/Zoom functions and six preset patterns can be controlled from the supplied IR Remote Commander.

Easy-to-use and Ergonomically-designed Remote Control Unit

All camera settings including the Pan/Tilt/Zoom function and six preset patterns can be controlled from the optional RM-BR300 Remote Control Unit. The ergonomic joystick design and feature-rich control panel provide superb operability in various remote-shooting applications.

Optical Multiplex Unit

With the optional BRBK-303 Optical Multiplex Card and the optional BRU-300P Optical Multiplex Unit, uncompressed digital data including external sync and camera control can be transmitted via the BRU-300P Optical Multiplex Unit. With only a single cable connection required between the camera and the optical multiplex unit, the system is extremely easy to install. The maximum cable length between these units is 500 metres – allowing multiple cameras to be located virtually anywhere you want.

What's more, the BRU-300P Optical Multiplex Unit is equipped with two built-in card slots identical to the ones found in the BRC-300P camera allowing for flexible analogue and digital system configurations.

BRBK-302

Optional Board mounted on BRC-300P (rear)

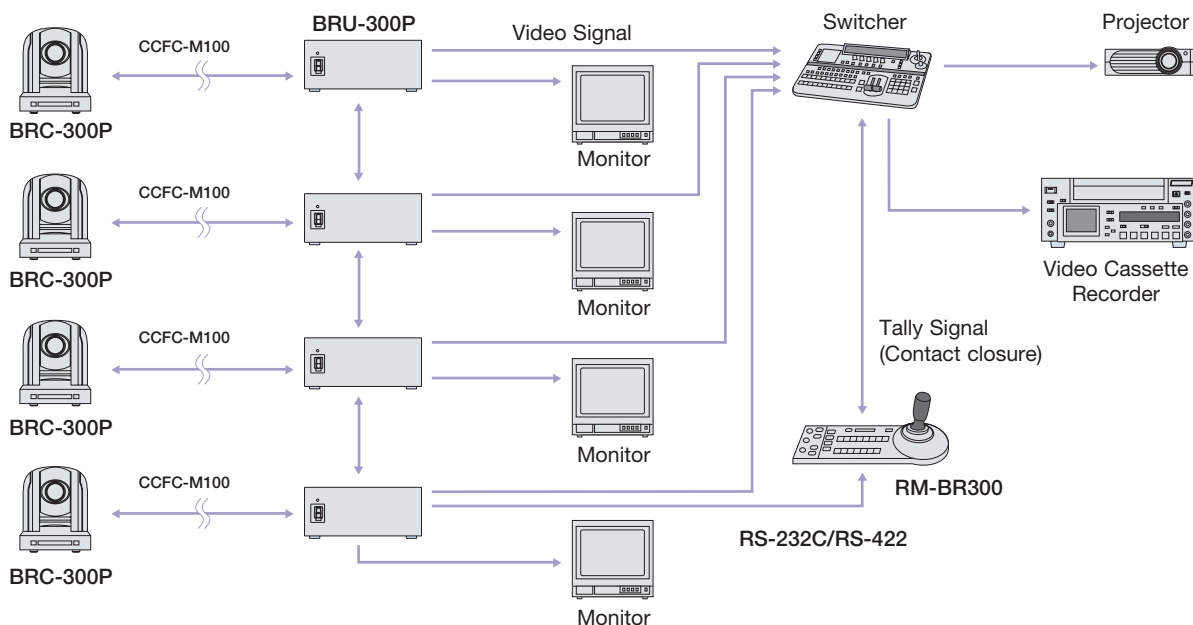


BRBK-301 / BRBK-302

Optional Boards mounted on BRU-300P (rear)



MULTIPLE-CAMERA OPERATION FROM A REMOTE LOCATION



BRC-H700



FEATURES

Superb Picture Quality – Three 1.07 Megapixel HD CCDs

The BRC-H700 incorporates three 1/3-inch type HD CCD sensors with a total of 1,070,000 effective pixels each, resulting in outstanding picture quality with high resolution. It also delivers accurate colour reproduction, and is ideal in low-light shooting environments.

High-Performance Pan/Tilt/Zoom Mechanism

The BRC-H700 covers a wide shooting range with its highly accurate Pan/Tilt mechanism. It has a very wide pan range of 340 degrees and a tilt range of 120 degrees. Both pan and tilt speeds are variable within the range of 0.25 to 60 degrees per second. This enables the BRC-H700 to capture not only fast-moving objects, but also slow-moving objects without rocking vibration. What's more, the BRC-H700 incorporates a 12x optical auto-focus zoom lens, allowing for a zoom capability of up to 48x when used in combination with its 4x digital zoom.

RS-232C/RS-422 Remote Control (VISCA protocol)

The BRC-H700 can be controlled by external devices such as the optional RM-BR300 Remote Control Unit thanks to Sony's well-known VISCA protocol. All local controls such as Pan/Tilt/Zoom, camera settings, and sixteen presets can be easily accessed, and up to seven cameras can be daisy-chained and controlled by a single RM-BR300 Remote Control Unit.

Flexible Installation – Ceiling Mount or Flat Surface

Because the BRC-H700 has an "Image Flip" function, the unit can either be mounted on a ceiling using the supplied ceiling mount kit or placed on a flat surface to meet your installation and space requirements.

Sixteen Presets

Various camera settings such as Pan/Tilt/Zoom and focus can be configured for up to sixteen presets per camera.

BRU-H700

HD Optical Multiplex Unit



RM-BR300

Control Panel

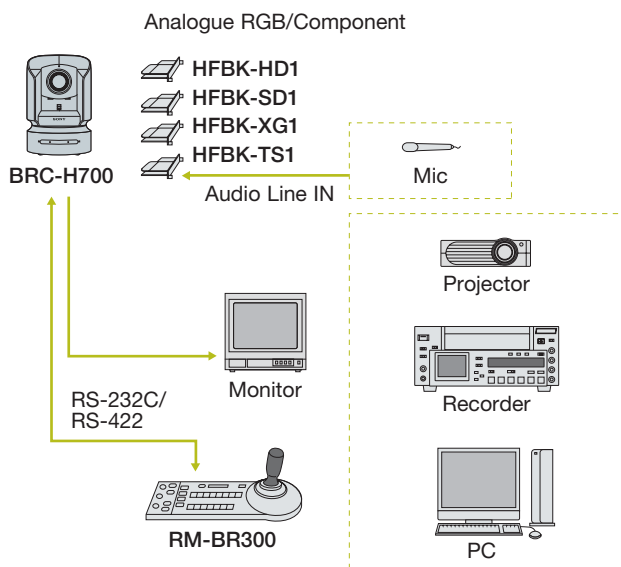


Supplied IR Remote Commander Unit

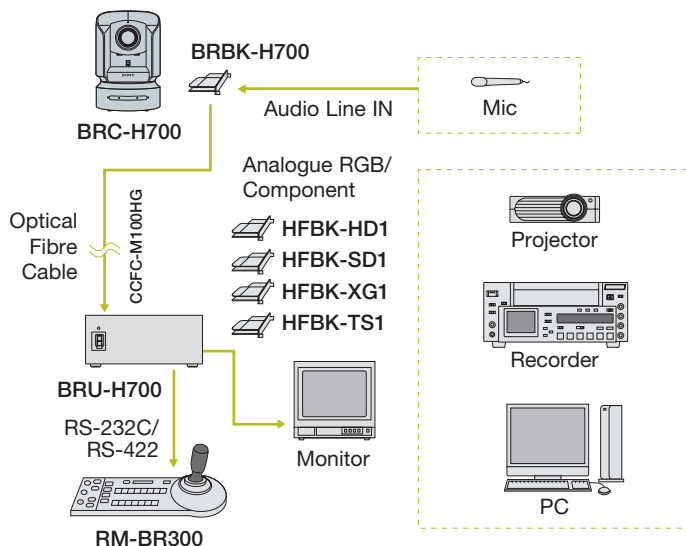


System Configuration

SHORT-DISTANCE OPERATION



LONG-DISTANCE OPERATION



Versatile Video Outputs

The BRC-H700 is supplied with a D-sub 15-pin RGB/YPbPr interface. The unit can also accept a range of versatile optional interface cards that allow for flexible analogue and digital system configurations. Choose from the following interface cards to configure a solution that meets your individual requirements:

- **HFBK-HD1*** HD-SDI, HD Analogue RGB/Component
- **HFBK-SD1*** Down Converted Analogue RGB, Analogue Component, Analogue Composite, SD-SDI
- **HFBK-XG1*** WXGA, XGA (Letter Box, Crop), VGA (Letter Box, Crop)
- **HFBK-TS1*** i.LINK for use with HDV systems

Thanks to these convenient option cards, the BRC-H700 truly functions as an all-in-one, compact robotic camera.

* Can be installed in both the BRC-H700 and BRU-H700.

Multi-function IR Remote Commander™ Unit

Basic camera settings, such as the Pan/Tilt/Zoom functions and six preset patterns, can be controlled from the supplied IR Remote Commander unit.

Easy-to-use and Ergonomically Designed Remote Control Unit

All camera settings, including the Pan/Tilt/Zoom functions and sixteen preset patterns, can be controlled from the optional RM-BR300 Remote Control Unit. The ergonomic joystick design and feature-rich control panel provide superb operability in various remote-shooting applications.

Optical Multiplex Unit

Uncompressed digital data including external sync, camera control and audio signals can be transmitted via the optional BRU-H700 HD Optical Multiplex Unit with the BRBK-H700 HD Optical Multiplex Card installed. With only a single cable connection between the camera and the HD Optical Multiplex Unit, the system is extremely easy to install. The maximum cable length between these units is 1,000 metres – allowing multiple cameras to be located virtually anywhere you want. What's more, the BRU-H700 HD Optical Multiplex Unit is equipped with two built-in card slots, each identical to the one found in the BRC-H700 camera, allowing for flexible analogue and digital system configurations.

BRBK-H700 rear panel

Optional Board mounted on BRC-H700 (rear)

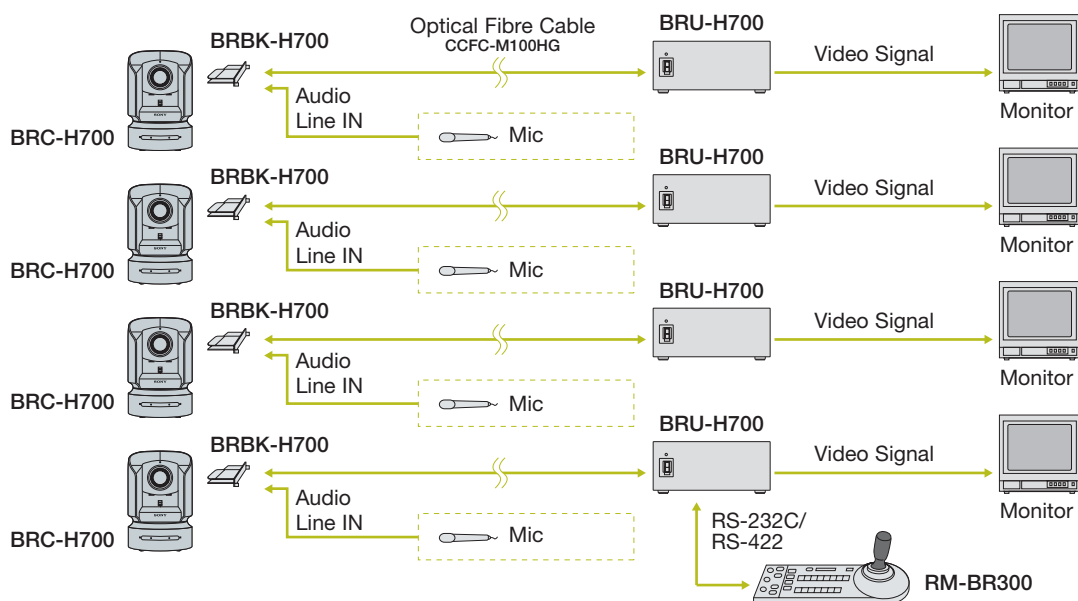


HFBK-HDI/HFBK-SDI

Optional Boards mounted on BRU-H700 (rear)



MULTIPLE-CAMERA OPERATION FROM A REMOTE LOCATION



FEATURES

HDC-X300K
HDC-X300
HDC-X310K
HDC-X310
HFU-X310

Superb Picture Quality

Incorporating three 1/2-inch type 1.5-mega pixel HD CCDs, the HDC-X300/X310 offers outstanding-quality images with a low smear level of -120 dB and a high signal-to-noise ratio of 52 dB.

Progressive Mode

Incorporating Sony's innovative Advanced Frame Accumulation (AFA) technology, the HDC-X300/X310 can output progressive HD signals (25PsF/29.97PsF), 2-3 pull down-converted signal from 23.976PsF (59.94i) in addition to interlaced HD signals (50i/59.94i). Interlace and progressive modes can be easily selected from the camera setup menu.

- 50i output mode: 50i or 25PsF selectable
- 59.94i output mode: 59.94i/29.97PsF/23.976PsF (with built-in 2-3 pull-down function) selectable

Compact and Lightweight Design

The HDC-X300/X310 is designed to be compact and lightweight, making it ideal for capturing HD-quality images at locations and from angles where bulky production HD cameras cannot be installed. This compact camera weighs only 1.2 kg (2 lb 10 oz)*, allowing easy installation in space-constrained and awkward areas such as on a crane head or helicopter. The supplied tally unit can be easily detached from the camera body, minimising the camera size to be fitted in, for example, a pan/tilt head or an underwater housing.

* HDC-X300

Low-Light Shooting

The HDC-X300/X310 offers two convenient functions for capturing clear images in low-light environments – a Slow Shutter mode and a Gain function – which can be used separately or together. The Slow Shutter mode allows the charge accumulation period of the CCD (typically 1/60 or 1/50 second) to be extended up to approximately two seconds (64 frames). The Gain function allows the camera gain to be boosted to +48 dB. When these functions are used together, the camera offers a stunning minimum illumination of 0.003 lx.

Auto-Focus Function*

While maintaining compatibility with interchangeable manual-focus lenses, the HDC-X300/X310 comes packaged with a convenient auto-focus lens. Two auto-focus modes are available and can be selected on the supplied lens. One-push auto-focus readjusts the focus each time the button is pressed, while auto-tracing focus automatically tracks the focus in a dynamic manner.

* Auto-focus function is only available when using the focus servo lens VCL-719BXS included in the HDC-X300K/X310K package.



HDC-X300/X310

with included tally unit, optional HKC-SV1
and connected with an HFU-X310

HDC-X300/X310

Filter Wheel



HDC-X300/X310

with an optional
HKC-SV1 attached



Low Light Shooting

Slow Shutter Off



Slow Shutter On
(64 frames)



Flexible Image Controls

The HDC-X300/X310 provides highly advanced image-control functions such as matrix, a TruEye™ feature, skin-tone detail, and colour temperature controls. These functions - previously available only on high-end studio cameras or camcorders - allow creative images to be produced with high clarity.

Trigger Function

Two types of trigger modes are available with the HDC-X300/X310, allowing synchronised operation with external equipment. The flash trigger input mode allows the camera to capture a high-quality still image when synchronized with an external flash - a function suited for photo-booth or document-stand applications. Another trigger mode is the 23.976PsF frame lock mode. When the HDC-X300/X310 is set to 23.976PsF progressive mode, the camera outputs a 2-3 pull-down trigger signal for frame locking to other HDC-X300/X310 cameras.

Remote Control Capability

The HDC-X300/X310 is compatible with the RM-B150/B750 Remote Control Unit, RCP-700 Series Remote Control Panel and MSU-900/950 Master Setup Unit. These remote controllers cover the complete range of control parameters that the HDC-X300/X310 provides, from basic camera control to sophisticated operations.

Optical ND Filter and Electronic CC Function

Optimum light and colour control is easily achieved using the built-in optical Neutral Density (ND) filter wheel and electronic Colour Correction (CC) function. The HDC-X300/X310 uses electronic colour correction to eliminate the need for optical colour correction filters. This allows all filters on the filter wheel to be ND types, providing the operator with greater flexibility in depth of field and exposure control.

HKC-SV1 Servo Filter Unit

The HKC-SV1 is a servo unit that allows the optical ND filters of the HDC-X300/X310 to be controlled remotely from the RM-B750/B150 Remote Control Unit, RCP-700 Series Remote Control Panel or MSU-900/950 Master Setup Unit.

SYSTEM VERSATILITY

HFU-X310 Camera Interface Unit

The HFU-X310 Interface Unit is a 2U-high, half-rack-wide unit that accepts signals from the HDC-X300/X310 camera and converts them to a variety of signal formats. When the HFU-X310 unit is connected to the HDC-X310 camera via a fibre optical cable*, digital data - including external sync and camera control signals - can be transmitted between the two devices. This cable can be up to 1000 metres (3280 feet) long, which allows the camera to be installed virtually anywhere required. When it is connected to the HDC-X300 camera via an HD-SDI interface, video signals can be transmitted between the interface unit and camera at a distance of up to 100 metres (328 feet)**.

This HFU-X310 interface unit is equipped with SD/HD genlock, tally inputs, plus an 8-pin serial remote input to connect the RM-B750/B150, RCP-700 Series, or MSU-900/950 control unit. Output interfaces including HD-SDI, SD-SDI, computer XGA, and i.LINK (HDMI) are offered via optional boards that are installed in the two slots located on the unit's rear panel.

HDV Recording

The HFU-X310 Interface Unit with the optional HFBK-TS1 board installed provides the output of an HDV stream that can be transferred to Sony HDV recording decks and camcorders such as HVR-M10, HVR-Z1, and HVR-A1 via its i.LINK port. This allows signals captured by the HDC-X300/X310 cameras to be recorded in the HDV format on these recorders, making it possible to establish a compact and cost-effective HD recording system.

The HFU-X310 Interface Unit can also accept HD-SDI signals from devices other than HDC-X300 cameras, enabling the HFU-X310 with the HFBK-TS1 board to be used as a converter between HD-SDI devices and HDV devices**.

*1 A single mode fibre cable with LC connector is required for the connection between the HDC-X310 and HFU-X310.

*2 For camera control, remote controllers such as the RM-B750/B150, RCP-700 Series, or MSU-900/950 must be connected directly to the rear panel of the HDC-X300 camera.

*3 The HFU-X310 unit does not accept audio signals and timecode embedded in HD-SDI signals. However, audio signals can be transferred to HDV devices together with video signals by connecting the HD-SDI device's audio output to the analogue audio input connectors on the HFBK-TS1 board. The dip switch on the HFBK-TS1 board would adjust the audio delay such that the embedded audio would match the video coming out from the 6-pin i.LINK as MPEG-TS stream.

HDV recording



HDC-X300/X310 rear panels

HDC-X300



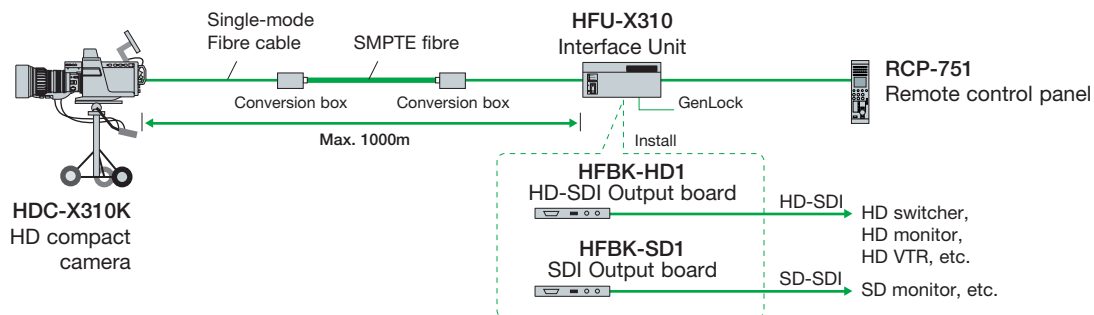
HDC-X310



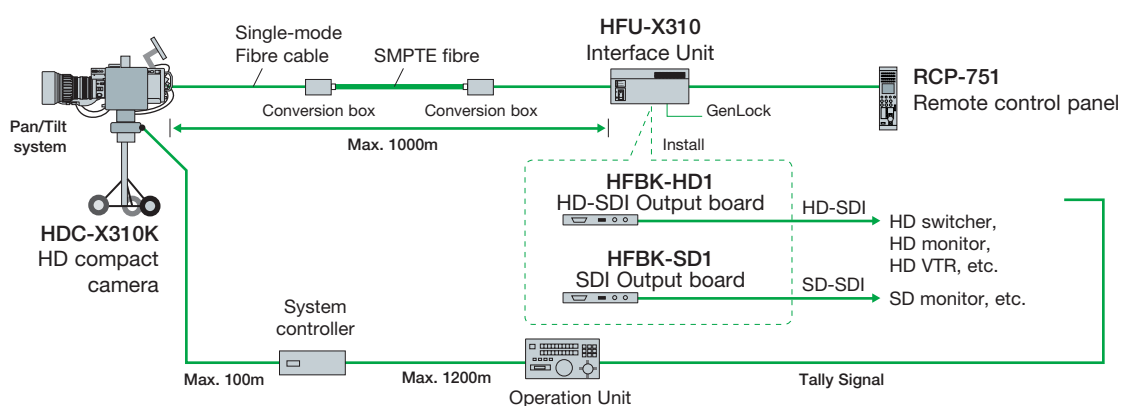
System Configuration

HD STUDIO OPERATION

Operation using a tripod



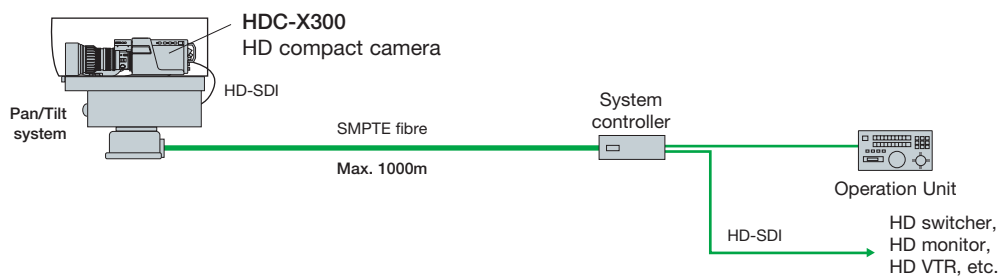
Operation using a tripod and pan/tilt systems



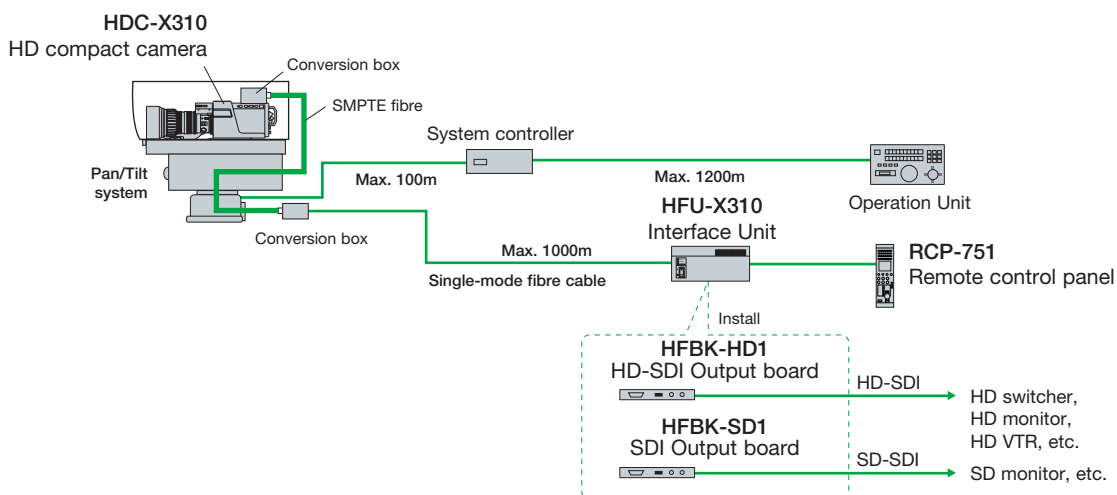
CAMERA SYSTEM FOR LONG-DISTANCE TRANSMISSION

(e.g. fixed-point observation, weather surveillance)

Pan/Tilt system 1

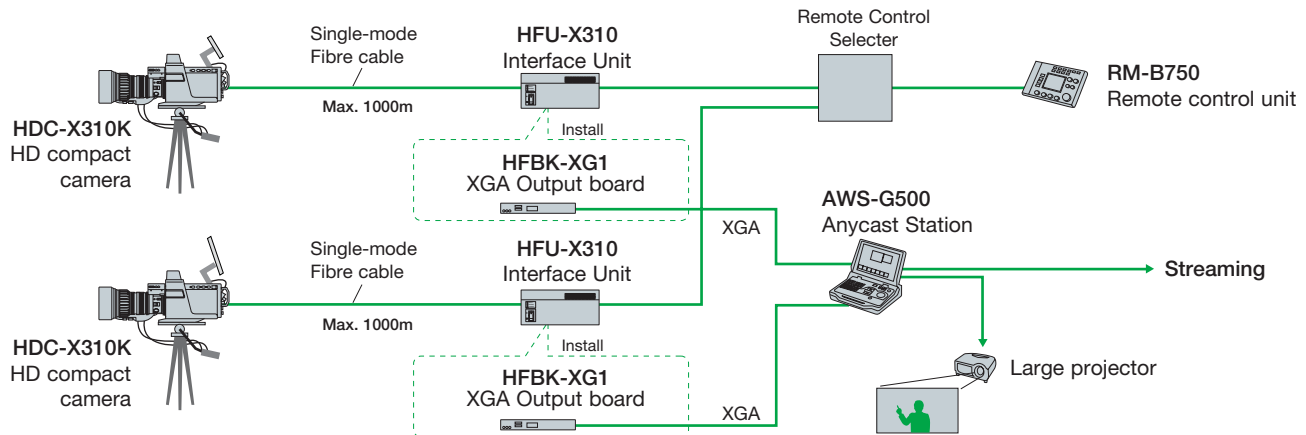


Pan/Tilt system 2

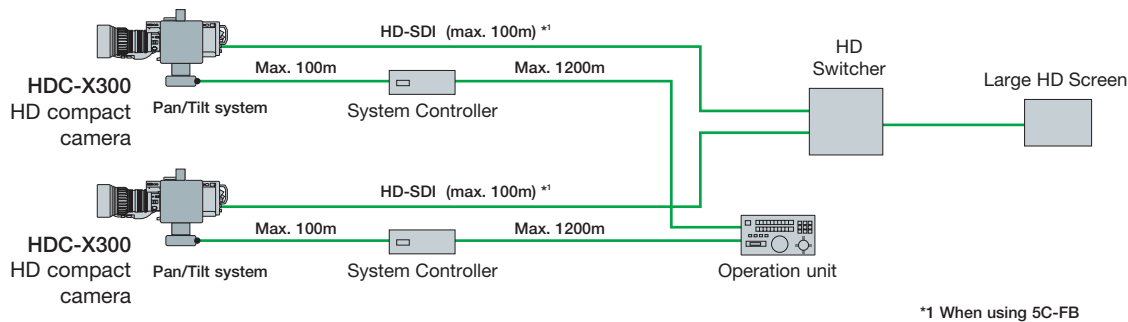


LIVE EVENT OPERATION

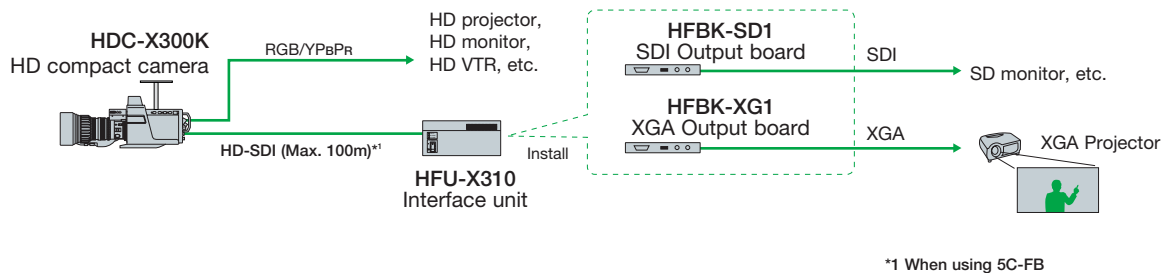
Used with Anycast Station



Used with HD switcher

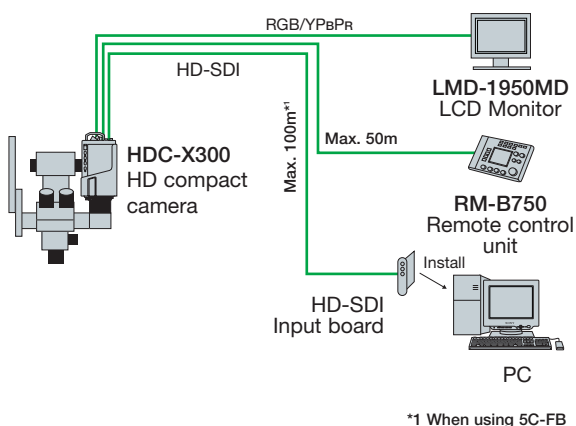


HD CAMERA SYSTEM FOR LARGE VENUES (e.g. classroom, conference halls)

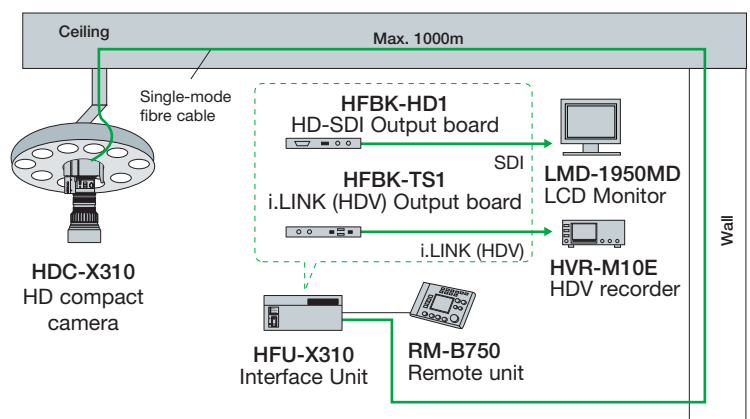


HD MEDICAL RECORDING

Microscope system



Operating theatre system



Accessories



BRBK-301

BRC-300P

Analogue/RGB Component Card



BRBK-302

BRC-300P

SDI Card



BRBK-303

BRC-300P

Optical Multiplex Card



BRBK-304

BRC-300P

DV Output Card



BRBK-H700

BRC-H700

HD Optical Multiplex Card With Audio IN (RCA pin)



HFBK-HD1

BRC-H700 • BRU-H700 • HFU-X310

HD-SDI Output Board



HFBK-SD1

BRC-H700 • BRU-H700 • HFU-X310

SDI Output Board



HFBK-TS1

BRC-H700 • BRU-H700 • HFU-X310

i.LINK (HDTV) Output Board



HFBK-XG1

BRC-H700 • BRU-H700 • HFU-X310

XGA Output Board



HFU-X310

HDC-X300/K • HDC-X310/K

Optical Fibre Interface Unit



HKC-SV1

HDC-X300/K • HDC-X310/K

Filter Servo Unit



BRU-300P

BRC-300P

Optical Multiplex Unit



BRU-H700

BRC-H700

HD Optical Multiplex Unit



MSU-900

HDC-X300/K • HDC-X310/K

Master Setup Unit



MSU-950

HDC-X300/K • HDC-X310/K

Master Setup Unit



RCP-750/751

HDC-X300/K • HDC-X310/K

Remote Control Panel



RM-B150

HDC-X300/K • HDC-X310/K
Remote Control Unit



RM-B750

HDC-X300/K • HDC-X310/K
Remote Control Unit



RM-BR300

BRC-300P • BRC-H700
Remote Control Unit



CCFC-M100HG

BRC-H700 • BRU-H700 (1000 metres max.)
BRC-300P • BRU-300P (600 metres max.)
HD Optical Fibre Cable



CCFC-M100

BRC-300P • BRU-300P (500 metres max.)
Optical Fibre Cable



CCMC-9DS

BRC-300P • BRC-H700 • HFBK-SD1
RGB/Component, Y/C Cable (9-pin D-sub)



CCXC-9DBS

BRC-300P • BRC-H700 • HFBK-SD1
RGB/Component, VBS Cable (9-pin D-sub)



VCL-0737W

BRC-300P
Wide Conversion Lens



VCT-U14

HDC-X300/K • HDC-X310/K
Tripod Adaptor
Requires A-8279-993-A V-shoe adaptor and K4x8 screw (x4)

HFU-X310 rear panel with optional boards



BRU-300P rear panel



RM-BR300 rear panel



BRU-H700 rear panel



Specifications

BRC-300P 3CCD Colour Video Camera

Image device	Three 1/4.7 type IT Advanced HAD CCDs, 1,070,000 pixels (gross)
CCD effective pixels	4:3 mode, 960 (H) x 720 (V) 16:9 mode 1,152 (H) x 648 (V)
Effective pixels	752 (H) x 582 (V)
Signal system	PAL
Horizontal resolution	4:3 mode: 600 TV lines
Sync systems	Internal/External
Lens	12x optical zoom, 48x with digital zoom
Focal length	f = 3.6 to 43.2 mm (F1.6 to F2.8)
Horizontal viewing angle	4:3 mode: 3.3 (Tele end) to 37.8 degrees (Wide end) 16:9 mode: 4.0 (Tele end) to 45.4 degrees (Wide end)
Minimum object distance	300 mm (Wide end), 800 mm (Tele end)
Pan/Tilt angle	-170 to +170 degrees (Pan), -30 to +90 degrees (Tilt)
Pan/Tilt speed	0.25 to 60 degrees/s (Pan/Tilt)
Minimum illumination	7 lx at F1.6
S/N ratio	50 dB
Shutter speed	1/10000 to 1/3 s
Gain	Auto/Manual (-3 to 18 dB, 3 dB steps) switchable
White balance	Auto, Indoor, Outdoor, One-push WB, Manual
Preset positioning	6 positions
Analogue output	VBS (BNC), Y/C (4pin Mini DIN)
Camera control interface	RS-232C (VISCA protocol) / RS-422 (VISCA protocol)
Back-light compensation	On / Off
Operating temperature	0 to 40 degrees (32 to 104 °F)
Storage temperature	-20 to 60 degrees (-4 to 140 °F)
Power requirement	DC 12 V
Power consumption	21.6 W (without optional card)
Dimensions (W x D x H)	180 x 205 x 211 mm (7 1/8 x 8 1/8 x 8 3/8 inches)
Mass	2.7 kg (5 lb 15 oz)
Supplied accessories	AC adaptor (1), IR remote commander (1), Terminal connector (1), AC adaptor cable (1), Ceiling bracket (2), Operating instructions (1)

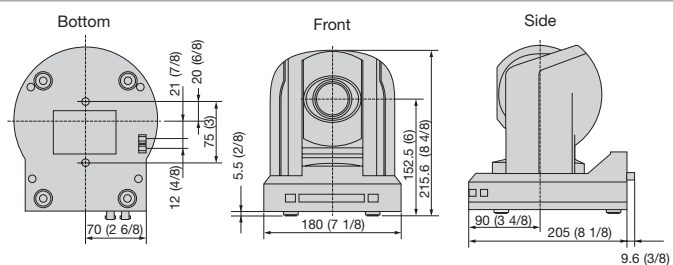
BRU-300P Optical Multiplex Unit

Optical fibre	Multi mode, LC-type connector
Video output	VBS (BNC), Y/C (4-pin Mini DIN)
Camera control interface	RS-232C (VISCA protocol) / RS-422 (VISCA protocol)
Sync systems	Internal/External
Card slots	2 slots: Analogue RGB-Component card / SDI card
Operating temperature	0 to 40 degrees (32 to 104 °F)
Storage temperature	-20 to 60 degrees (-4 to 140 °F)
Power requirements	AC 220 to 240 V, 50/60 Hz
Power consumption	9 W (without optional cards)
Dimensions (WxHxD)	212 x 88 x 233 mm (8 3/8 x 3 1/2 x 9 1/4 inches)
Mass	2.7 kg (5 lb 15 oz)
Supplied accessories	AC power cable (1), Terminal connector (1), RS-232C cable (3 m, 8-pin Mini DIN) (1), Operating instructions (1)

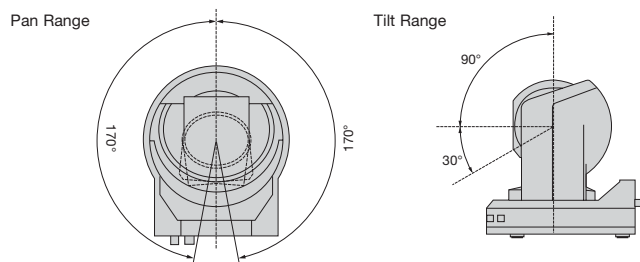
RM-BR300 Remote Control Unit

Camera control interface	RS-232C (VISCA protocol) / RS-422 (VISCA protocol)
External control	Contact closure
Power requirement	DC 10.8 to 13.2 V
Power consumption	2.4 W
Dimensions (WxHxD)	391.3 x 185 x 145.9 mm (15 1/2 x 7 3/8 x 5 3/4 inches)
Mass	950 g (2 lb 1 oz)
Supplied accessories	AC adaptor (1), AC power cable (1), RS-232C cable (3 m, 8-pin Mini Din) (1), Terminal connector(2), Operating instructions (1)

BRC-300P Dimensions (Unit: mm)



BRC-300P Pan/Tilt Range



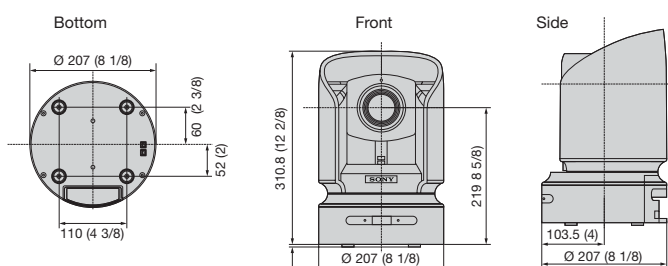
BRC-H700 HD 3CCD Colour Video Camera

Image device	Three 1/3 type IT CCDs
Total picture elements	Approx. 1.12 Megapixels
Effective picture elements	Approx. 1.07 Megapixels
Signal systems	1080/59.94i, 1080/50i (switchable)
Lens	12x optical zoom, 48x with digital zoom Carl Zeiss Vario-Sonnar T**
Focal length	f=4.5 to 54.0 mm (F1.6 to F2.8)
Minimum object distance	800 mm (Tele end)
Horizontal viewing angle without Image Stabilization	5.5 degrees (Tele) to 60.3 degrees (Wide)
Vertical viewing angle without Image Stabilization	3.1 degrees (Tele) to 36.2 degrees (Wide)
Focus system	Auto/Manual
Pan/Tilt angle	-170 to +170 degrees (Pan), -30 to +90 degrees (Tilt)
Pan/Tilt speed	0.25 to 60 degrees/s (Pan/Tilt)
Minimum illumination	6 lx (50 IRE, F1.6)
S/N ratio	50 dB
Shutter speed	1/10,000 to 1/59.94 (1/50) s
Gain	Auto/Manual (0 to 18 dB and Hyper Gain)
White balance	Auto, Indoor, Outdoor, One-push WB, Manual
Optical Image Stabilizer	On/Off
Image flip	On/Off
ND filter	Off/ND1/ND2
Preset positioning	16 positions
Video output (Built-in)	Analogue RGB, Analogue Y/Pb/Pr
Video output (With optional card(s))	HFBK-HD1: HD-SDI HFBK-SD1: Down converted SD (RGB, Y/Cb/Cr, Y/C, Composite, SDI x2) HFBK-XG1: WXGA, XGA, VGA HFBK-TS1: HDV
Camera control interface	RS-232C/RS-422 (VISCA protocol)
Backlight compensation	On/Off
Operating temperature	0 to 40 degrees (32 to 104 °F)
Storage temperature	-20 to 60 degrees (-4 to 140 °F)
Power requirements	DC 12 V
Power consumption	Max. 24 W (without optional card)
Dimensions (Diameter x H)	207 x 315.8 mm (8 1/4 x 12 1/2 inches)
Mass	4.5 kg (9 lb 15 oz)
Supplied accessories	IR Remote Commander Unit (1), RS-422 terminal block connector (1), AC adaptor (1), AC power cable (1), Ceiling bracket (2), Wire rope, Mounting screws, Operating instructions (1)

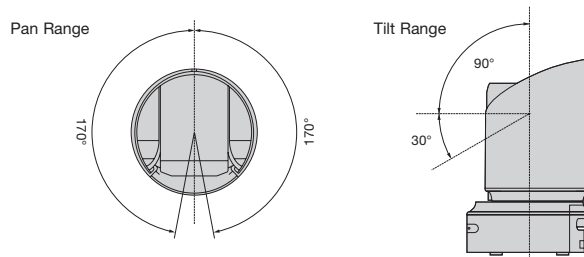
BRU-H700 HD Optical Multiplex Unit

Optical fibre connector	Multi mode, LC-type Fibre Connector
Video output (Built-in)	Analogue RGB, Analogue Y/Pb/Pr
Video output (With optional card : slot x2)	HFBK-HD1: HD-SDI HFBK-SD1: Down converted SD (RGB, Y/Cb/Cr, Y/C, Composite, SDI x2) HFBK-XG1: WXGA, XGA, VGA, HFBK-TS1: HDV
Camera control interface	RS-232C/RS-422 (VISCA protocol)
Sync systems	Internal/External
Multiple connection	Up to 7 Units
Operating temperature	0 to 40 degrees (32 to 104 °F)
Storage temperature	-20 to 60 degrees (-4 to 140 °F)
Power requirements	59.94 i : AC 100 to 120 V (50/60 Hz) 50 i : AC 220 to 240 V (50/60 Hz)
Power consumption	Max. 10 W (without optional cards)
Dimensions (WxHxD)	210 (W) x 240 (D) x 86 (H) mm (8 3/8 x 9 1/2 x 3 1/2 inches)
Mass	2.7 kg (5 lb 15 oz)
Supplied accessories	AC power cable (1), RS-422 terminal block connector (1), RS-232C cable (1), Operating instructions (1)

BRC-H700 Dimensions (Unit: mm)



BRC-H700 Pan/Tilt Range



	HDC-X300	HDC-X310
General		
Power requirements	DC 12 V	
Power consumption	18 W (camera head only) 23.5 W (with the VCL-719BXS, HKC-SV1 Filter Servo Unit, and the RM-B750 Remote Control Unit connected)	19 W (camera head only) 24.5 W (with the VCL-719BXS, HKC-SV1 Filter Servo Unit, and the RM-B750 Remote Control Unit connected)
Operating temperature	-10 to +45 °C (+14 to +113 °F)	
Storage temperature	-20 to +60 °C (-4 to +140 °F)	
Mass	Approx. 1.2 kg (2 lb 10 oz) (camera head only) Approx. 1.7 kg (3 lb 11 oz) (including camera head, tally unit)	Approx. 1.3 kg (2 lb 13 oz) (camera head only) Approx. 1.8 kg (3 lb 15 oz) (including camera head, tally unit)
Camera		
Pickup device	3-chip 1/2-inch type 1.5-megapixel CCD	
Effective picture elements (H x V)	1440 x 1080	
Optical system	F1.4 prism system	
Built-in filters	1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND	
Lens mount	Sony 1/2-inch bayonet mount	
Signal system	1080/59.94i, 1080/50i	
Scanning system	59.94i/23.976PsF/29.97PsF selectable at 59.94i 50i/25PsF selectable at 50i	
Sync system	Internal and External (3 state/VBS (BB))	
Sensitivity (2000 lx, 89.9% reflectance)	F10 (typical)	
Minimum illumination	0.003 lx (F1.4, +48 dB gain, with slow shutter mode at 64 frame accumulation)	
Gain selection	-3, 0, 3, 6, 9, 12, 18, 24, 30, 36, 42, 48 dB	
Shutter speed	1/60 (50i mode), 1/100, 1/250, 1/500, 1/1000, 1/2000 s	
Slow shutter	2, 3, 4, 5, 6, 7, 8, 16, 32, 64 frame	
Clear scan	50 to 200 Hz (50i mode), 60 to 200 Hz (59.94i mode)	
Smear level	-120 dB (typical)	
S/N ratio	52 dB (typical)	
Geometric distortion	Below measurable level (without lens)	
Modulation depth at 21 MHz	40% (typical) (with HD SDI output)	
Signal inputs		
Genlock video	BNC type (1), 3-level/2-level (VBS, VS)	
Trigger	BNC type (1), TTL level	
Signal outputs		
HD SDI	BNC type (1), 0.8 Vp-p ±10%, 75 Ω	—
Video	HD D-sub 15-pin (1) Y/Pr/Pb: 1.0 Vp-p, 75 Ω R/G/B: 1.0 Vp-p, 75 Ω HD/VD: TTL level (3 Vp-p) Sync: 0.6 Vp-p, 75 Ω	
Tally	Mini-jack (1)	
Other inputs/outputs		
OFC	—	Single mode, LC optical connectors (2)
Remote	8-pin (1)	
Lens	14-pin (1)	
DC input	DC jack (1)	

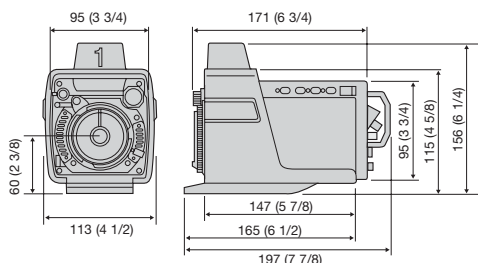
VCL-719BXS (supplied with the HDC-X300K/X310K)

Focal length	6.7 to 127 mm
Zoom	Manual or power selectable
Zoom ratio	x19
Maximum aperture	1:1.6, 1:2.1 (at telephoto end)
Aperture	Manual or automatic selectable
Focusing range	Infinity to 5 cm
Filter attachment threads	82 mm dia. 0.75 mm pitch
Mounting	Sony 1/2-inch bayonet mount
Mass	1.34 kg (2 lb 13 oz) including lens foot

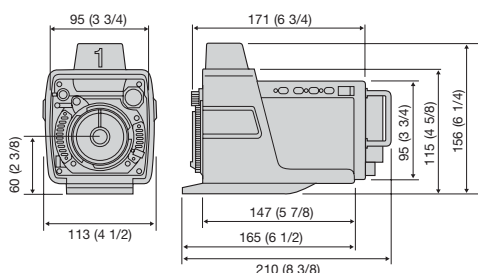
Supplied accessories
Operation manual (1), AC adaptor (1), AC cable (1), Tally unit (1), Number plate (1), Lens mount cap (1), VCL-719BXS focus servo lens (1), HDC-X300K/X310K only

HDC-X300/X310 Dimensions (Unit: mm)

HDC-X300



HDC-X310



HFU-X310

General

Power requirements	AC 100 to 240 V, 50/60 Hz
Current consumption	Max. 0.6 A
Operating temperature	+5 to +40 °C (+41 to +104 °F)
Storage temperature	-20 to +60 °C (-4 to +140 °F)
Maximum cable length	Optical fibre cable (single mode): 1000 m (3280 feet)
Dimensions (W x H x D)	200 x 88 x 215 mm (7 7/8 x 3 1/2 x 8 1/2 inches) without projection
Mass	Approx. 2 kg (4 lb 6 oz)

Signal inputs/outputs

Remote	8-pin (1)
Genlock	BNC type (2), 3-level/2-level (VBS, VS) Sync block 0.3 Vp-p (when terminated), 75 Ω, loop-through
HD SDI input	BNC type (1) Conforming to SMPTE 292M
OFC	Single mode, LC connectors (2), send/receive
Multi-connector	6-pin (1)
AC input	3-pin (1)
Number of optional board slots	2
Supplied accessories	Operation manual (1), OFC cover (1), M3 x 4 screws (2), M4 x 4 screws (1), Multi-connector plug (1)

Optional Output Boards

HFBK-HD1 HD-SDI Output Board

HD-SDI output	BNC type (2)
Analogue HD monitor output	15-pin type (1), RGB or YPbPr

HFBK-SD1 SD-SDI Output Board

SD-SDI output	BNC type (1)
Analogue composite output	BNC type (1)
Analogue monitor output	D-sub 9-pin type (1), VBS, YPbPr or RGB

HFBK-XG1 XGA Output Board

VGA output	15-pin type (1) WXGA, XGA or VGA resolution selectable
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HFBK-TS1 i.LINK (HDTV) Output Board

i.LINK (HDTV) output	i.LINK 6-pin type (1) (without power supply)
Audio input	RCA analogue audio input (2, L/R)

PIN Assignment D-sub 15-pin

Signal	Pin number		
①	R (X)/Pr (X)	⑧	B (G)/Pb (G)
②	G (X)/Y (X)	⑨	NC
③	B (X)/Pb (X)	⑩	GND
④	NC	⑪	NC
⑤	GND	⑫	NC
⑥	R (G)/Pr (G)	⑬	HD
		⑭	VD/SYNC
		⑮	NC

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